

HOGOBO" MARKOGO

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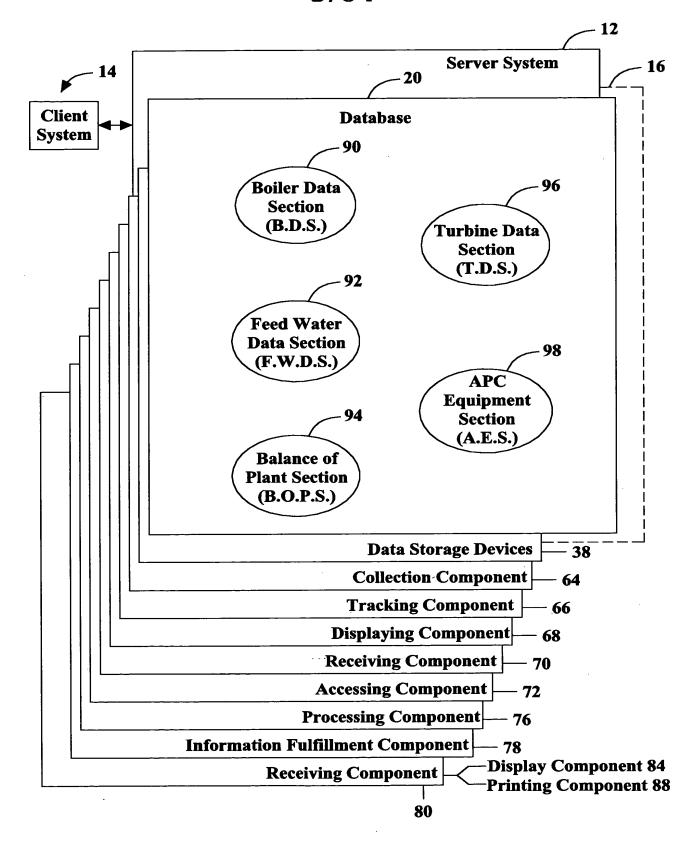
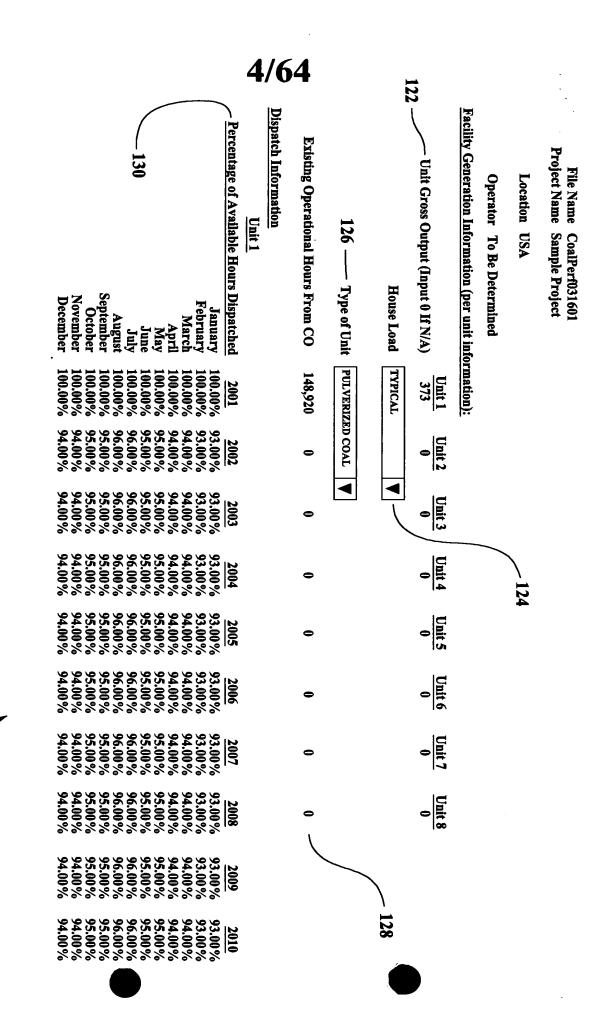


FIG. 3



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98.00% 97.00% 98.00% 98.00% 99.00% 99.00% 98.00%	2010

FIG. 5

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V	V	

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Decembe	November	Octobe	Septembe	Augus	Jul	Jun	Мa	Apri	Marci	Februar	Januar	Dispatched Load		December	November	Octobe	September	Augus	July	Jun	Mai	Apri	Marci	Februar	Januari	Percentage of Available Hours Dispatched	Unit 2
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98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2002	7003	94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2003	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	1004	2004	94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2004	
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98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	1000	2006	94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2006	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	100	2007	94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2007	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00% 8.00%	98.00%		2008	94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2008	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%		2009	94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2009	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00% 97.00%	98.00% 98.00%		2010	94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2010	

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December	November	October	September	August	July	June	May	April	March	February	January	Dispatched Load		December	November	Öctober	September	August	July	June	May	April	March	February	January	Percentage of Available Hours Dispatched	Unit 8
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2001		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2001	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2002		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2002	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2003		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2003	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2004		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2004	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2005		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2005	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2006		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2006	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2007		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2007	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2008		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2008	
98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2009		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2009	
್ಲ98.00%	98.00%	98.00%	99.00%	100.00%	100.00%	99.00%	98.00%	98.00%	97.00%	98.00%	98.00%	2010		94.00%	94.00%	95.00%	95.00%	96.00%	96.00%	95.00%	95.00%	94.00%	94.00%	93.00%	93.00%	2010	

Fuels Information: 142

ACTUAL ANALYSIS

Moisture & A	Ash Free	
Carbon	74.66%	
Hydrogen	5.26%	
Nitrogen	1.08%	
Chlorine	0.02%	
Sulfur	1.31%	

18.24%

Oxygen

Proximate (Sulfur Free)
Fixed Carbon 34.00%
Volatile Matter 30.70%
Moisture 29.80%
Ash 5.60%

Excess Air 20.00% HHV 9.500

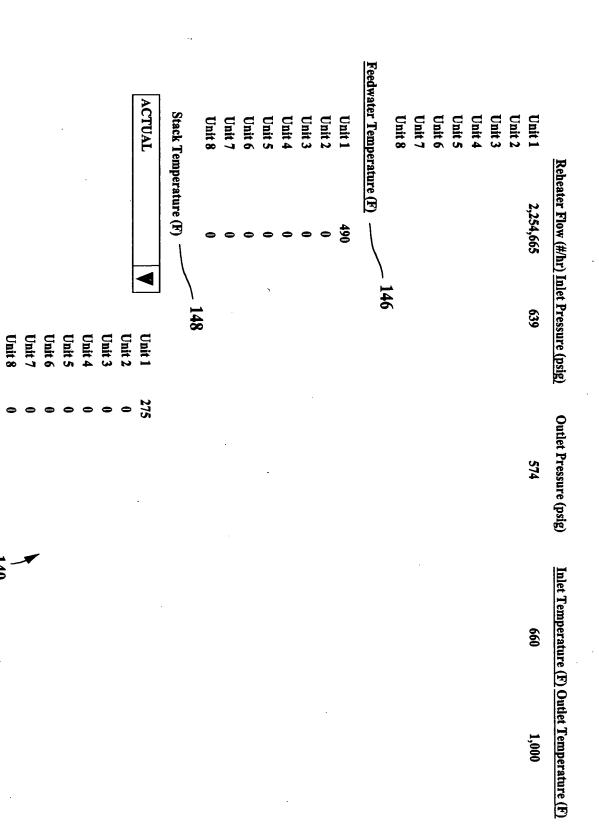
Ash Mineral Analysis

Silica - SIO2 31.00% Alumina - Al2O3 14.00% Titania - Tl2O3 1.10% Ferric Oxide - Fe2O3 6.60% Lime - CaO 24.60% 6.00% Magnesia - MgO Potassium Oxide - K2O 0.26% Sodium Oxide - Na2O 1.30% Sulfur Trioxide - SO3 12.20% Phosphorous Pentoxide - P2O5 0.70% Undetermined 2.30%

Operational Information:

Cycle ACTUAL CYCLE VALUES

	Superheater Flow (#/hr)	Outlet Pressure (psig)	Outlet Temperature
Unit 1	2,568,331	2,400	1,000
Unit 2			
Unit 3			
Unit 4			
Unit 5			
Unit 6			
Unit 7			
Unit 8		>	
		1 40	



TOSOBO" EZERESO

FIG. 14

Facility Equ	uipment Info	rmation:			
Flyash	Control Equ	nipment ————————————————————————————————————			
	Unit 1	BAGHOUSE			
	Unit 2	ESP	\blacksquare		
	Unit 3	BAGHOUSE PLUS GORETEX BAGS	lacksquare		
	Unit 4	ESP	lacksquare		
	Unit 5	ESP			
	Unit 6	ESP	lacksquare		
	Unit 7	ESP			
	Unit 8	ESP	\blacksquare		
SO2 Co	ontrol Equip	ment			
	Unit 1	SCRUBBER	lacksquare	LIME	\blacksquare
164	Unit 2	NO SO2 EQUIPMENT	V	LIME	V
104	Unit 3	DRY INJECTION	\blacksquare	LIME	lacksquare
	Unit 4	NO SO2 EQUIPMENT	V	LIME	lacksquare
	Unit 5	NO SO2 EQUIPMENT	lacksquare	LIME	lacksquare
	Unit 6	NO SO2 EQUIPMENT	\blacksquare	LIME	lacksquare
	Unit 7	NO SO2 EQUIPMENT		LIME	V
	Unit 8	NO SO2 EQUIPMENT	V	LIME	V

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FIG. 15

	Mercury Control 1	Equipment	
166 —	Unit 1	ACTIVATED CARBON	\blacksquare
	Unit 2	NO HG CONTROL	
	Unit 3	NO HG CONTROL	
	Unit 4	NO HG CONTROL	V
	Unit 5	NO HG CONTROL	
	Unit 6	NO HG CONTROL	
	Unit 7	NO HG CONTROL	V
	Unit 8	NO HG CONTROL	V
168	NOx Control Equi	ipment	
	Unit 1	SCR	lacksquare
	Unit 2	LOW NOX BURNERS	lacksquare
	Unit 3	SNCR	▼
	Unit 4	LOW NOX BURNERS	▼
	Unit 5	LOW NOX BURNERS	\blacksquare
170	Unit 6	LOW NOX BURNERS	▼
	Unit 7	LOW NOX BURNERS	lacksquare
	Unit 8	LOW NOX BURNERS	▼
Pricing Inform	nation:		
	Coal Pric FOB M Transporta	line \$15.00	



\$30.00

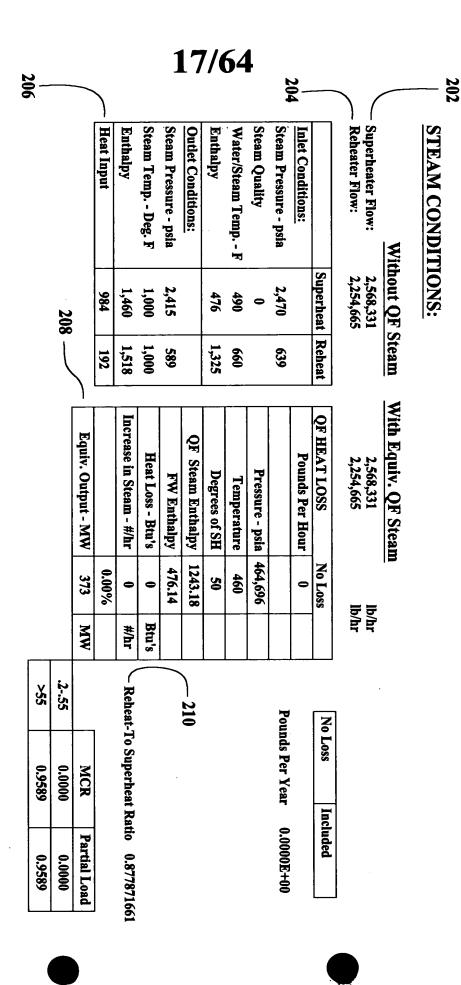


FIG. 17

							1	8	/6	4	•											
	GROSS HEAT FIRED ——— 200	EFFICIENCY 198	TOTAL	BLOWDOWN BLOWDOWN	MFG. MARGIN	RADIATION	CARBON	196 H20 & H2 IN FUEL		HEAT LOSS /	AIR LEMP: LEAVING THE AIR HEATER (APPROX) EXCESS AIR	AMBIENT AIR TEMP.	(uncorr.)	GAS TEMP. LEAVING AIR HEATER	FEEDWATER TEMP.	PRES. AT SUPERHEATER/REHEATER OUTLET	TEMP. AT SUPERHEATER/REHEATER OUTLET	Reheater:	EVAPORATION Superheater:	TURBINE STEAM FLOW CORRECTION FACTOR	FUEL Pulverized Coal	PREDICTED PERFORMANCE: AVERAGE LOAD
EIC 10	MM/btu/hr	pct	-	pet .				pct		Ħ	Dct -	ובי נ		দ্র	ম	psig		lb/hr 2.	lb/hr 2,			
	3,554.99	85.81%	14.19%	0.00%	1.50%	0.35%	0.25%	8.04% 0.10%	4.36%		20 20	80		275	490	2,400	1,000	2.254.665	2,568,331	0.9589		100%
19																574	1,000					(MCR)
	3,366.55	86.08%	13.92%	0.00%	1.43%	0.33%	0.24%	8.02% 0.10%	4.20%		20	80		268	490	2,400	1,000	2,141,932	2,439,914	0.9589		95.00%
		93.85%	6.15%		1.43%	0.33%	0.20%		4.20%	LHV			_			574	1,000					
	29 30 31	27	25	24	3 23	21	20	19	17	16	15	: ដ	12	11	10	9	∞	7	0	s.	4 60 4	, –

				19/	64						
Plant Net Heat Rate: 194	Net Heat Rate (Turbine Only): Plant Gross Heat Rate: ————————————————————————————————————	Gross Heat Rate (Total Plant):	NO. OF UNITS	SOOTBLOWING STEAM NET EVAPORATION	FLUE GAS TO STACK LUNGSTROM AIR HEATER LEAKAGE	TOTAL FLYASH/LIMESTONE REMOVAL SYSTEM LOADING	TOTAL ASH (100% UP) TOTAL LIMESTONE (100% UP)	TOTAL COMBUSTION AIR	TOTAL COMBUSTION PRODUCTS	FUEL FIRED PER YEAR	FUEL FIRED PER HOUR AVERAGE LOAD CONDITION DURING AVAILABLE HOURS
BTU/KW HR	BTU/KW HR	BTU/KW HR	,	lb/hr lb/hr	lb/hr lb/hr	t/hr t/hr	t/hr t/hr	ACFM lb/hr ACFM	lb/hr	t/yr	lb/hr TPH %
9,338 LHV	Ħ		6.89	0 2,568,331	3,601,358 0	25,586 14.60	11.50 3.10	1,109,079 3,183,124 997,176	3,601,358	8,256 1,726,472	418,234 209.12 100.00%
9,310 10,654 9,852	kJ/kWh 10,068										tonnes/hr 190
8,796 10,066 9,308	BTU/kW HR 9,513			0 2,439,914	114,152 3,410,4560 0	24,230 13.83	10.89 2.93	3,014,392	3,410,456	8,256 1,634,955	396,065 198.03 95.00%
9,280 10,621 9,820	kJ/kWh 10,036										tonnes/hr 180
222	62 63	56 57	222	51 52	48	\$ 5	4 4 4	40	38	3635	32 33 34

FIG. 19

				20/6	54					-	
	Boiler: Turbine: APC Equipment: Feedwater System: BOP:	Planned Spare Parts:	Unplanned Maintenance: 10% of Planned Maintenance:	Boiler: Turbine: (Major Turbine Outage assumed in 1998) APC Equipment: Feedwater System: BOP:	Planned Maintenance:	Warranty Support: Percent of Annual Labor:	Home Office Technical Support: Percent of Annual Labor:	Bonus Payments:	Operator's Fees & Services:		Direct Labor: Adjusted for local labor requirements yes=1, no=0
F	\$1,731,661 \$766,330 \$149,151 \$62,661 \$176,591 \$2,866,394		\$410,033	ssumed in 1998)	\$4,100,334	S 0	\$0	\$0	\$327,939	\$8,459,453	2001 Total Plant Costs no=0 0
FIG. 20								v			Unit 1
20											Unit 2
							-				Unit 3
											Unit 4
220	#										Unit 5
											Unit 6
				·							Unit 7
	\$1,731,661 \$766,330 \$149,151 \$62,661 \$176,591		\$410,033		\$4,100,334	\$ 0	\$0	\$ 0	\$327,939	\$8,459,453	Unit 8
	- -	<	×		Z	175	늄	퍽	12 3	4	Total
						•					

Cost of Generation:

Gross kW generated Annually	Total Operation Costs Including Taxes and Insurance:	Taxes Insurance Not Included! Building Data Base	Total Operating Budget Case 4	Equipment Rental:	Purchased Power:	Limestone:	Coal:	Chemicals:	Consumables:	Start-up Fuel:	Ash Disposal:	Contract Services: Percent of Annual Labor:	Office/Administration expenses:	Other Employee Expenses, Fees and Services:	Employee Travel & Relocation:	Unplanned Spare Parts: 10% of Planned Spares:
	ce: \$0	se \$0		\$1,416,663				\$458,866	\$379,977			Included	\$381,973	\$286,422	\$86,300	\$288,639
2,921,795,923				-	\$212,706	\$359,458	\$48,510,069			\$64,716	\$1,126,990					
0					\$0	80	80			8	80					
0					\$0	\$ 0	8			\$0	80					
0					\$0	8	S			S	8					
0					80	S	S			8	80					•
0					8	8	S			\$0	8					
0					\$0	\$0	8			\$0	80					
0					8	80	S			8	\$0					
0 2,921,795,923	\$0 \$69,780,837			\$1,416,663	\$212,706	\$359,458	\$0 \$48,610,069	\$458,866	\$379,977	\$84,715	\$0 \$1,126,990		\$381,973	\$286,422	\$86,300	\$288,639
푀				<	V	V	<	<	∀	V	<		দ	Ħ	'	

O & M Cost Summary For: 2000

Direct Labor:	Fixed Costs \$6,459,453	Variable Costs	Major Maintenance	Fuel
Operator's Fees & Services:	\$327,939			
Bonus Payments:	\$0			
Home Office Technical Support:	\$0			
Warranty Support:	\$0			
Planned Maintenance:			\$4,100,334	
Power Marketing & Resource Management:	\$0			
Unplanned Maintenance:			\$410,033	
Planned Spare Parts:				
Boiler: Turbine: APC Equipment: Feedwater System: BOP:		\$1,731,661 \$756,330 \$149,151 \$82,661 <u>\$176,591</u> \$2,866,394		

Unplanned Spare Parts:		\$2,886,394			
Employee Travel & Relocation:	\$86,300				
Other Employee Expenses, Fees and Services:	\$286,422				
Office/Administration expenses:	\$361,973				
Contract Services:	Included				
Ash Disposal:		\$1,126,990			
Start-up Fuel:		\$84,716			
Consumables:		\$379,977			
Chemicals:		\$458,886			
Coal:				\$46,510,069	
Limestone:		\$359,458			
Purchased Power:		\$212,706			
Equipment Rental:		\$1,418,553			
Total Operating Budget	1 \$9,622,066 13.65%	\$7,216,116 10.35%	\$4,610,068 8.47%	\$4,610,068 8.47%	Total Generation Costs \$69,780,637



\$0.0239

Fixed Costs Variable Costs Maintenance \$0.0033 \$0.0026 \$0.0166 \$0.0166

File Name: CoalPerf031601 Project Name: Sample Project Operator: To Be Determined Location: USA

									`		
Facility Generation Information (per unit information)	er unit information)	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Total	
Facility Net Output:	Use typical value=1, Actual=2 1	352.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.0 N	WW
House Loan (~5.5 /6);	House Load in MW	5.50% 20.49	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00% N	WW
Line Losses: Unit Gross Output:	Total Installed Capacity in MW 373	<u>0</u> 373	olo	010	910	010	010	00	010	Total N	WW WM
	Equivalent Gross	373	9	9	0	9	0	0	9	373 N	WW
O&M Costs Calculated:	Based on Actual Gross Output = 1 Based on Fouriv. Gross Output = 2	1	,		—	_	-	-	-		
Equiv. Increased MW Output: (Approximate)	0 #hr	$\frac{0}{373}$	010	010	010	010	010	010	010	77	WW
Gross Output Used in O&M Calculations:	lations:	373	•	•	•	0	•	0	•	>	WW
Unit Net Heat Rate (HHV)	(Full Load Calculated Value) BTU/KW HR 10,098	R 10,098 10,654	• •			00	• •	• •	• •	Btu/kWh kJ/kWh	

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		244						17-Mar-01	17-	Cost Related Information: Escalation Date
Unit 8 0% 0 0 450	11	Unit 7 0% 0 0 450	Unit 6 0% 0 0 450	Unit 5 0% 0 0 450	Unit 4 0% 0 0 450	Unit 3 0% 0 0 450	Unit 2 0% 0 0 450	Unit 1 0% 0 0 450 50	PF Steam Flow (% of MCR) ounds Per Hour (Average) ounds Per Year ressure (psig) regrees of SH (F) (Input 0 for saturated steam or input actual degrees of SH)	QF Steam For: QF Steam Flow (% of MCR) Pounds Per Hour (Average) Pounds Per Year Pressure (psig) Degrees of SH (F) (Input 0 for saturated stean
0.00%		0.00%	0.000	0.00%	0.00%	0.00%	0.00%	2,921,796 2,761,097 8,760 8,256 0 0 0 0 354 89.53% 334 95.00%	Gross Generation (Actual) Net Generation (Actual) Net Generation (Actual) Per Year = 1, Per Month = 2 1 age Hours age Hours age Hours """ Check 0.9589	Period Hours Available Hours Forced Outage Hours Planned Outage Hours Maintenance Outage Hours Average Load Condition (Gross) Average Load Condition (Net) W
0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	89.53% 94.25%	Net Capacity Factor Availability Factor	Gross Generation (Actual)
• •		• •	. 0	• •	• •	• •	• •	373 352	9,867	Gross Maximum Capacity Net Maximum Capacity
Unit 8		Unit 7 0	Unit 6	Unit 5	Unit 4 0	Unit 3 0	Unit 2 0	Unit 1 1	Unit In Operation Yes=1, No=0	Base O&M Labor Costs On
	- 1							-	2001	Operational Information For:

17-Mar-01

			20	6/64		. 18.1
NC	Start-up Fuel Oil Cost Per C	Cost per Ton Of:	Disposal Cost per Ton of ASH/Scrubber Sludge	Disposal Cost per Ton of ASH/Scrubber Sludge	Cost per Ton of Fuel (Including trans.)	erhaul ricity dex CPI C Mate Labor
NG Cost Per Therm Transportation:	Oil = 1; NG = 2 Oil Cost Per Gallon (Delivered)	Lime FOB Mine: Transportation: Total:	LIMESTONE 1 LIME 2		Coal FOB mine: Transportation:	Input for day of the year of work Base omposite Index 79.7 98.7
\$0.50	2 \$0.80	\$0.00 \$0.00 \$15.00	\$10.00 2	17.00 \$0.88 \$1.76	USB \$15.00 \$15.00 \$30.00 \$33.07	4.00% 01-May-94 \$0.060 147.00 154.00
		•		MM Btu's/ton \$/MM Btu's - FOB mine \$/MM Btu's - Delivered	\$/ton - FOB Mine per ton per tonne	4
			21.35 100	Ash - Tonne Basis	6.66 11	- Tonn
			22.68 26.22 106.23% 115.61%		7.55 8.61 113.36% 114.04%	Basis
			26.22 15.61%		5 114.51% 5 8.61 6 114.04%	

FIG. 26

				27	/64		
NOx Control System	Mercury Control System	SO2 Control System:	Flyash Control System	Unit Design / Commercial Operation Date Number of Boilers	Type of Boiler Equipment (1 or 2) 1 2	Facility Equipment Information:	Operator Related Information: Operator Fee Operator Bonus Home Office Tech Support Warranty Support Number of Shifts Union/non-union Facility Overtime Wage Benefits
2 ACTIVATED CARBON	1 NO HG CONTROL	1 NO SO2 EQUIPMENT 2 DRY INJECTION 3 SCRUBBER	1 ESP 2 BAGHOUSE 3 BAGHOUSE PLUS GORETEX BAGS	ate	PULVERIZED COAL FLUIDIZED BED		10
	2	ယ	Š 2	PC 1	<u>UNIT 1</u> <u>UNIT 2</u> 1 1		\$0 \$0 \$0 40%
	-	–	-	PC 1	UNIT 2		
		2	tus .	PC 1	UNIT 3		
	—	–	-	PC 1	UNIT 4		
	-	· ~		PC 1	UNIT 5		248
	-	—	-	PC 1	UNIT 6		
	-	–	-	PC 1	<u>UNIT 7</u>		25(
	-	–	-	PC	UNIT 8		

FIG. 27

3 SCR	2 SNCR	1 LOW NOX BURNERS	
		ı	
		_	
		2	
		_	
		-	
		_	
		_	

	1 LOW NOX BURNERS 2 SNCR 3 SCR	w	-	2	–	11	-	-	-	
Cooling Tower: (Yes=1; No=0)	No=0)		_	-	-		1	_	_	
Cycle:	1 ACTUAL CYCLE VALUES 2 STANDARD 1800 PSIG (NON-REHEAT) 3 STANDARD 2400 PSIG (5% OP)	1	-		-	1	-	-	-	
Superheater:	(~4,080,000 @ 600 MW) (Input Actual Flow Value if Available)	ailable)								
	Flow without QF heat loss Equiv. OF Steam Increase	2,568,331 0		• •	• •	• •		• •	• •	
	Total Steam Flow	2,568,331	0	•	0	0	0	0	0	
	Outlet Pressure Outlet Temperature	2,400 1,000	00	• •	• •	• •	00	• •	o des	psig deg F
Reheater:	~3,770,000 @ 600 MW		0	ı	,		,	•	•	
	Flow Without QF neat loss Equiv. QF Steam Increase	2,254,005 0	o c	- -	• •	-	0 0	-	•	
	Total Steam Flow	2,254,665	01	O 1	01	• I	01	01	O I	
	Inlet Pressure (psig) Inlet Temperature (F)	660 639	00	- -	• •	- -	00			psig
	Outlet Pressure (psig) Outlet Temperature (F)	574 1,000	00	- -	• •	- -	00	• •	0 ps	psig
Feedwater Temperature		490	0	•	•	•	0	•	•	_
Stack Temperature Ambient Temperature	1 ACTUAL 1 2 STANDARD	275 80	00	00	• •	• •	00	• •	• •	
Spares Cost	SO2 Removal	90%	0%	0 %	0%	9 %	0% %	0 %	0 %	_
Fuel Loss during Handling:		3%	%	9 %	%	0%	0%	0%	0 %	

		29/64	\$1 · -
	Proximate:	Fuel Analysis:	Fuels Information: STANDARI STANDARI STANDARI STANDARI STANDA
Fixed Carbon (differential) Volatile Matter Sulfur Moisture	Excess Air: HHV: LHV:	Ultimate Analysis Moisture Ash Carbon Hydrogen Nitrogen Chlorine Sulfur Oxygen	ACTUAL ANALYSIS STANDARD BITUMINOUS STANDARD SUBBITUMINOUS STANDARD LIGNITE (TEXAS) STANDARD NATURAL GAS Engli:
33.71% 30.44% 0.85% 29.55% 5.45% 100.00%	20.00% 8,500 Btu/lb 18.28 GJ/tonne	Sub- Bituminous 29.80% 5.50% 48.30% 3.40% 0.70% 0.01% 0.01% 11.80% 100.36%	ב כ נ ב ב ע
Note 1:	Excess Air: HHV: LHV:	Natural Gas Oxygen Argon Carbon Dioxide Nitrogen Hydrogen Hydrogen Sulfide Methane Ethane Propane n-Butane n-Propane n-Hexane Total:	
(68F, 30"WG)	10.00% 0 Btu/ 0 Btu/	(Gas analysis is en O2	
··	Btu/CF(1) Btu/CF(1)	Gas analysis is entered on fuels page) O2 0.00% A 0.00% CO2 0.00% H2 0.00% H2S 0.00% C2H6 0.00% C3H8 0.00% C4H10 0.00% C5H12 0.00% C6H14 0.00% C6H14 0.00%	

FIG. 29

- 254

Carbon Loss

Furnace Volume Design Parameters

- 258

Volume - Cu. Ft.: Surface - Sq. Ft. (EPRS - Up Nose): NHI/PA:

20,000 200,000 1,850,000

0.25%

File Name: CoalPerf031601

TOSOMO" MESSESOO

Project Name: Sample Project

Location: USA

Operator: To Be Determined

Escalation
Escalation Factor 4.00% 1.070

Plant Bollers Headers Heating Surface Waterfall Steel Firing Equipment Misc. Equipment	Development Fee Mine Acquisition Costs Site Purchase Development Fee/Mine Acquisitions/Site	Development Costs Internal Costs Third Party Costs Project Counsel Development Contingency Land Options Pre NTP EPC Cost Total Development Costs	Number of Equipment Sets Per Unit Unit Gross Output
\$4,307 \$21,936 \$12,904 \$16,533 \$10,275 \$20,646 \$86,601	\$9,057 \$0 \$12,076 \$21,133	\$11,833 \$12,326 \$1,578 \$0 \$986 \$1,972 \$28,694	Unit 1 1 373 19-Mar-01
\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Unit 2 0
\$0.00 \$0 \$0 \$0 \$0 \$0 \$0	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Unit 3 0
\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Unit 4 0
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Unit 5 0 0
00.00 00 00 00 00.00 00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	Unit 6
\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Unit 7 0
\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	Unit 8 0
\$86,600.65	\$9,057.13 \$0.00 \$12,076.17 \$21,133.30	\$11,832.68 \$12,325.70 \$1,577.69 \$0.00 \$986.06 \$1,972.11 \$28,694.24	Total Facility 1 373

Other

Buildings

BAGHOUSE BAGHOUSE SCRUBBER ACTIVATED CARBON SCR Circulating Water System Electrical System & Equipment Fuel Storage & Handling Infrastructure Water Treatment Other	Turking Canarators
---	--------------------

Boilers - not plant related Chimneys Cooling Towers Coal Bunkers

Fixtures

Misc. Insurance

Land & Buildings

EPC Target
Total EPC Costs

Transmission Fees During Construction

Waste Water Pipeline

General & Administrative Professional Services Engineering Consultants Utilities Owner's Mobilization G&A Other Owner's Costs Management Sevices Fee Total Owner's Costs	Management Sevices During Construction
--	--

	On Control				
\$15,382.48 \$2,760.96 \$1,972.11 \$0.00 \$0.00 \$2,218.63 \$1,725.60 \$24,059.78	\$4,021.87 \$11,189.05	\$34,773.70 \$49,085.86	\$515.62 \$446.53 \$3,500.06 \$20,257.85 \$1,002.37	\$419.07 \$37,253 \$1,275.65 \$23,330.45 \$17,662.70 \$0.00 \$3,132.42 \$39,755.15	\$38,324 \$7,459 \$37,253
\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0 80
\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0 80 08
\$0.00 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	0\$ 0\$ 0\$
\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	0\$ 0\$ 0\$
\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	0\$ 0\$ 0\$
\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	08 08 08
\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00 \$0.00	00 00 00 00
\$15,382,48 \$2,760.96 \$1,972.11 \$0.00 \$0.00 \$2,218.63 \$1,725.60 \$24,059.78	\$4,021.87	\$34,773.70 \$49,085.86 \$400.046.65	\$515.62 \$446.53 \$3,500.06 \$20,257.85 \$1,002.37	\$419.07 \$37,252.60 \$1,275.65 \$23,330.45 \$17,662.70 \$0.00 \$3,132.42 \$39,755.15	\$38,324.29 \$7,459.07 \$37,252.60

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Total Cost \$/kW Installed	Unit Gross Output		Financing Fees/Costs Financial Advisor Upfront Fees	Infrastructure Costs Total Owner's Contingency	Owner's Contingency Power Plant EPC Costs Transmission Costs Electrical Interconnection	Construction Camp Water Management Total Infrastructure Costs	Roads Community Infrastructure Mine Industrial Area	Owners G&A	G&A Plant Consumables Equipment	O&M Mobilization Labor Fee
\$587,823 \$1,578	373	Unit 1	\$6,409.37 \$8,381.48 \$14,790.35	\$1,567.44 \$41,772.10	\$40,204.67 \$0.00 \$0.00	\$1,176.37 \$15,674.85	\$8,263.15 \$1,054.09 \$5,180.74	\$9,663.35 \$24,440.39	\$374.70 \$1,356.81 \$5,423.31	\$6,606.58 \$1,015.64
\$0 \$0	0	Unit 2	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00
\$0 80	0	Unit 3	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00
0\$	0	Unit 4	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00
\$0 80	0	Unit 5	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00
\$0 \$0	0	Unit 6	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00
\$0 80	0	Unit 7	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00
\$0	0	Unit 8	\$0.00 \$0.00	\$0.00 80.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00
\$587,823 \$197	373	Total Facility	\$6,409.37 \$8,381.48 \$14,790.85	\$1,567.44 \$41,772.10	\$40,204.67 \$0.00 \$0.00	\$1,176.37 \$15,674.35	\$8,263.15 \$1,054.09 \$5,180.74	\$9,663.3 <u>5</u> \$24,440.39	\$374.70 \$1,356.81 \$5,423.31	\$8,606.58 \$1,015.64

File Name: CoalPerf031601
Project Name: Sample Project

Location: USA

Operator: To Be Determined

Date	Mar-01	Mar-01 Mar-02 Mar-03 Mar-04 Mar-05 Mar-06 Mar-07 Mar-08 Mar-09 Mar-10	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	
Hours Of Operation											
(@end of operational year)											10 Year
Operational Year	1	2	3	4	5	6	7	8	9	10	Average
Waterwall	\$258	\$1,290	\$258	\$258	\$258	\$258	\$258	\$1,290	\$258	\$258	\$464
Heating Surface	\$439	\$2,193	\$439	\$439	\$439	\$439	\$439	\$2,193	\$439	\$439	\$790
Grates	\$0	\$0	\$0	0\$	\$0	80	\$0	0\$	\$0	\$ 0	\$0
Pulverizers	\$0	\$1,032	\$0	\$0	\$0	\$516	\$ 0	\$1,032	\$0	\$258	\$310
Air Pre-Heaters	\$ 0	\$1,032	\$ 0	\$0	\$0	\$516	\$0	\$1,032	\$0	\$258	\$310
Fuel Handling	\$0	\$88	\$0	\$0	\$0	\$88	\$0	\$177	\$0	\$88	\$62
Headers	\$0	\$215	\$0	\$0	\$0	\$0	\$0	\$215	\$0	\$ 0	\$43
Steel	\$0	\$0	\$0	\$0	\$0	\$17	\$0	\$ 0	\$0	\$ 0	\$2
Belts/Crushers	\$ 0	\$0	\$0	\$0	\$0	\$132	\$0	\$ 0	\$0	\$0	\$13
Casing/Refractory/Ductwork	\$0	\$0	\$ 0	\$0	\$0	\$177	\$0	\$ 0	\$0	\$0	\$18
Chemical Cleaning	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$550	\$0	\$ 0	\$55
	\$697	\$5.851	6707	670)))			001 7B	£02@		22066

FIG. 34

:

								3	5	5/(64	1									•	
Total	Sub-Total	Facilities/Infrastructure	General	Ash Handling	Power Block	I&C	Electrical	,	Sub-Total	SCRUBBER	BAGHOUSE		Sub-Total	Gravity Filters	Carbon Filters	MB Resin	Cation Resin	Anion Resin	Sub-Total	Generator (inspections)	Turbine Values	Turbine (insp/overhaul)
\$1,795	\$535	\$ 0	\$122	\$413	\$ 0	\$0	\$0		\$ 0	\$0	\$0		\$564	\$ 0	\$78	\$141	\$0	\$344	\$0	\$0	\$ 0	S 0
\$1,795 \$11,636 \$1,607 \$2,364 \$2,373 \$3,248	\$2,387	\$122	\$0	\$ 0	\$1,916	\$117	\$233		\$0	\$0	\$0		\$141	\$0	\$0	\$0	\$141	\$0	\$3,257	\$766	\$575	\$1,916
\$1,607	\$346	\$0	\$139	\$206	\$0	\$0	\$0		\$474	\$310	\$164		\$91	\$13	\$78	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$2,364	\$489	\$0	\$0	\$ 0	\$ 0	\$117	\$233		\$ 0	\$0	\$0		\$485	\$ 0	\$0	\$110	\$0	\$376	\$ 0	\$0	\$0	\$0
\$2,373	\$1,310	\$0	\$146	\$206	\$958	\$0	\$ 0		\$0	\$0	\$0		\$78	\$0	\$78	\$0	\$0	\$0	\$287	\$0	\$287	\$0
\$3,248	\$606	\$156	\$0	\$0	\$0	\$117	\$233		\$474	\$310	\$164		\$125	\$0	\$0	\$0	\$125	\$0	\$0	\$0	\$0	S 0
\$1,877	\$669	\$ 0	\$156	\$413	\$ 0	\$0	\$0		\$0	\$0	\$0		\$611	\$0	\$78	\$125	\$0	\$407	\$0	\$0	\$0	\$0
\$1,877 \$12,182 \$1,821 \$2,101	\$2,436	\$170	\$0	\$0	\$1,916	\$117	\$233		\$ 0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$3,267	\$766	\$575	\$1,916
\$1,821	\$535	\$ 0	\$122	\$413	\$0	\$ 0	\$0		\$474	\$310	\$184		\$116	\$38	\$78	\$ 0	<u>\$</u> 0	\$ 0	\$ 0	\$ 0	\$0	\$0
\$2,101	\$472	\$122	S 0	SO.	\$ 0	\$117	\$233		\$0	80	\$0		\$329	\$ 0	\$ 0	\$141	S 0	\$188	\$ 0	\$ 0	SO	\$0
\$4,100	\$968	\$71	\$68	\$165	\$479	\$58	\$117		\$142	\$93	\$49		\$264	\$5	\$39	\$52	\$27	\$132	\$680	\$153	\$144	\$383

FIG. 35

General Project Information:

File Name: CoalPerf031601
Project Name: Sample Project

Location: USA

Operator: To Be Determined

Operator's Fees & Service:

Operator Fee	\$0
Legal Services	\$139,805
Construction Services	\$146,709
Testing Services	<u>\$41,424</u>
total Fees & Services	\$327,939
<u>Travel:</u>	\$86,300
Misc. Employee Expenses	\$286,422

`\ 310

File Name: CoalPerf031601 Project Name: Sample Project

Location: USA

Operator: To Be Determined

Sample Project

Consumerables:

Lubricating Oils:

\$379,977

Hydraulic Oil:

Solvents/Boiler Wash: Cleaning Materials: Welding Supplies:

Nuts/Bolts/Small Mechanical Parts: Fuses/Light Bulb/Small Elect.Parts:

Fittings/Small I&E Parts:

Gas & Oil:

Total Oils and Lubricants \$379,977

Chemicals:

Sanitary: NOx:

Aqueous Ammonia:

Total Chemicals: \$458,686

Gases:

Nitrogen: \$0
Hydrogen: \$0
Oxygen/Acetylene: \$0
NOx, CO, SO2, O2 Span Gas: \$0

Total Gases: \$0



Office S	upplies & Services:	
	Postage, Overnight Mail, etc:	\$17,104
	Freight:	\$0
	Telephone:	\$41,038
	Utilities:	\$9,263
	Dues, Subscriptions:	\$70,914
	Advertising:	\$0
	Camera/Film/Photo Supplies:	\$0
	Copier/Paper/Services:	\$0
	Offices Supplies:	\$40,194
	General Supplies:	\$0
	Audio Visual Equipment	\$0
	Portable Radios/Services:	\$0
	Drinking Water:	\$0
	Safety Supplies:	\$0
	Safety/Environmental Insp:	\$0
	Instrument Service/Repair:	\$0
	Vehicles/Service/Repair:	\$165,28 4
	Insurance Autos/Trucks:	\$0
	Lift Trucks/Service:	\$0
	Small Tools:	\$0
	Software for Computers:	\$271
	Computer Hardware:	\$0
	Building Maintenance:	\$4,594
	Janitorial Supplies:	· · ·
	Misc. Expenses:	\$0
	Uniforms:	\$13,310
		. <u>\$0</u>

Total Supplies and Services: \$361,973

Office Furniture/Rent:

Office Rent:
Desk/Chairs/etc: \$0
Lab/Shop/Cntrl. Rm. Equip: \$0
Computer Lease: \$0

<u>\$0</u>

Total Office Furniture: \$0



File Name: CoalPerf031601

Project Name: Sample Project

Location: USA

Operator: To Be Determined

Rentals/Lease:

Tools:	\$15,304
Equipment:	\$261,694
Office:	- · · · · ·
Office Equipment:	\$57,431
Railcar:	\$1,066,871
Lease Auto/Trucks:	·\$17,253
Total Rentals:	\$1,418,553

Planned Spare Parts:

Dailon		\$1,731,001
Boiler:		\$766,330
Turbine: APC Equipment:		\$149,151
Feedwater System:		\$62,661
BOP:		\$176,591
	Total Spare Parts:	\$2,886,394

File Name: CoalPerf031601

Project Name: Sample Project

Location: USA

Operator: To Be Determined

Proximate Analysis:

FC 33.71%
VM 30.44%
S 0.85%
M 29.55%
A 5.45%
Total 100.00%

HHV (Btu/#) 8,500

Information used in conjunction with the coal classification figure:

BTU:

8504.98

Dry:

33.70%

Project Coal Classification:

3

Coal Type:

Sub-

(Calculated)

Bituminous

OK

Hardgrove Grind. Index:

Ash Mineral Analysis:

Silica - SIO2	31.00
Alumina - Al2O3	14.00
Titania - TIO2	1.10
Ferric Oxide - Fe2O3	6.50
Lime - CaO	24.60
Magnesia - MgO	6.00
Potassium Oxide - K2O	0.25
Sodium Oxide - Na2O	1.30
Sulfur Trioxide - SO3	12.20
Phosphorous Pentoxide - P2O5	0.70
Undetermined	2.35

Total 100.00

Ash Fusion Temperature (Deg. F)

Initial Deformation-Reducing (Input Data) 2189
Initial Deformation-Oxidizing (Input Data) 2239

PARR Formula Relationships:

BASE/ACID RATIO:

(A range of .4-.7 0.7641

coals and results in low ash-fusibility temps)

IRON/CALCIUM RATIO:

(3-0.3 INDICATIVE 0.26

lowers the fusibility temp. of the ash)

IRON/DOLOMITE RATIO:

(Blt. type ash u: 0.21

SILICA/ALUMINA RATIO:

(above 2.8 & b 2.21

Density Lb Fue ##Cu Ft (2) ##Cu Ft

FIG. 42

nalysis:	
onversion A	
g Value Co	
as Heating	lar-01
Natural G	17-N

17-Mar-01	•	•		>	>H H
			Btu/CF (1)	Comp. Btu	Comp. Btu
Natural Gas Analysis:	/sis:	Percent by vol		(68F, 14.70 psia) (60F, 14.70 psia)	(60F, 14.70 psia)
Oxygen	05	0.00%	0	0.00	00.0
Argon	∢	0.00%	0	0.00	0.00
Carbon Dioxide	C02	0.00%	0	0.00	0.00
Nitrogen	N2	0.00%	0	0.00	0.00
Hydrogen	7	0.00%	319.4	0.00	0.00
Hydrogen Sulfide	H2S	0.00%	547	0.00	0.00
Methane		0.00%	994.7	0.00	0.00
Ethane	C2H6	0.00%	1742.6	0.00	0.00
Propane	C3H8	0.00%	2480.1	0.00	0.00
Butane	C4H10	0.00%	3215.6	0.00	0.00
Pentane	C5H12	0.00%	3950.2	0.00	0.00
Hexane	C6H14	0.00%	4661.236	0.00	0
Total		%00.0	HHV=	0.00	0.00
				LHV	CH2
			Btu/CF (1)	Comp. Btu	Comp. Btu
Natural Gas Analysis:	/sis:	Percent by vol	•	(68F, 30"WG)	(60F, 30"WG)
Oxygen	05	0.00%	0	00.0	0.00
Argon	∢	0.00%	0	0.00	0.00
Carbon Dioxide	C02	0.00%	0	00.0	0.00
Nitrogen	N2	0.00%	0	0.00	0.00
Hydrogen	7	0.00%	270	0.00	0.00
Hydrogen Sulfide	H2S	0.00%	595	0.00	0.00
Methane	CH4	0.00%	896	0.00	0.00
Ethane	C2H6	0.00%	194.5	0.00	0.00
Propane	C3H8	0.00%	2282.6	0.00	0.00
Butane	C4H10	0.00%	2968.7	0.00	0.00
Pentane	C5H12	0.00%	3654	0.00	0.00
Hexane Total	C6H14	%00.0 0.00%	4311.72 LHV =	<u>0</u>	000
		2			

HHV/LHV Ratio #DIV/01

Notes: (1) Source Mark's Standard Handbook for Mechanical Engineers Ninth Edition Page 4-29

		Required Offsets Tons O2/MM SO2/Ton Cost of Offsets stu Coal Fired \$/Ton of Coal Fired	.97 0.038462 \$5.769	.45 0.018560 \$2.784	.50 0.032000 \$4.800	.00 0.025800 \$3.870 ~	.00 0.025800 \$3.870	.00 0.025800 \$3.870	.45 0.018560 \$2.784	2.17 0.018545 \$2.767
,	bs n BTU	SO2 Reduction lbs So	10.00% 2.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
\$/Ton	@ 1.2 II SO2/millio	ibs SO2/MM Btu	3.3	1.45	2.5	7	7	7	1.45	2.17
		8 % allowed for Compliance	0.778%	0.769%	0.769%	0.775%	0.775%	0.775%	0.769%	0.511%
fset Cost Assum	:	In Compliance (Y/N)*	z	z	z	z	z	z	z	Z
S02 Of		Average Ash Content (S%)	7.50%	8.88%	8.25%	9.75%	9.75%	9.75%	9.25%	5.50%
		Average Percent Sulfur (S%)	2.14%	0.93%	1.60%	1.29%	1.29%	1.29%	0.93%	0.92%
		Average BTU//Ib Content	12,950	12,800	12,800	12,900	12,900	12,900	12,800	8,500
	Southern Fuels	Mines	Bailey	Colonial	Whitetail	Juliana	Sawmill	Sentenial	Winifrede	
	SO2 Offset Cost Assumption \$150.00 \$/Ton	SO2 Offset Cost Assumption \$150.00	SO2 Offset Cost Assumption \$150.00 \$/Ton @ 1.2 lbs SO2/million BTU Average Average Ash Average BTU/lb Percent Content In Compliance 8 % allowed for lbs SO2/MM Reduction lbs SO2/MM SO2/Ton Content Sulfur (S%) (Y/N)* Compliance Btu Efficiency Btu Coal Fired	SO2 Offset Cost Assumption \$150.00 \$/Ton	SO2 Offset Cost Assumption \$150.00 \$/Ton	SO2 Offset Cost Assumption \$150.00 \$/Ton	SO2 Offset Cost Assumption \$150.00 \$/Ton SO2/million BTU SO2/million BTU	Average BTU/Ib Percent Content In Compliance Content Sulfur (S%) 8.5% N 0.769% 1.45 0.00% 1.290 1.290 1.290 1.290 1.290 1.290 1.29%	Average BTU/Ib Percent Content In Compliance S % allowed for 12,950 1.29% 1.29	Average BTU/Ib Percent Content In Compliance S Mallowed for It.390

FIG. 44

41907.04

1						
	%S/	0.79% 0.89%	0.81%		%S/0	0.29%
	S (tons)	6,762	6,116 18,534		S (tons)	6,762 12,518
	SO2 (tons)	13,510	12,220 37,230		SO2 (tons)	13,510 25,010
	BBtu 12 020	12,929	12,861 38,719		BBtu 38.856	39,984 78,840
	Tons Fired	756,000	<u>752,000</u> 2,264,000		Tons Fired	2,338,000 4,610,000
Check				Check		
Project Info. Check	¥I.	8,551 8,551	8,551	Project Info. Che	HH	8,55 155,6
Project	¥	Unit 2	Unit 3	Proj	1	Unit 2

	tons of Offset Required 10,968 #NUMI #NUMI #NUMI
	SO2 (1.2#/MMBtu) Allowable Tons 16,493 #NUMI #NUMI
	SO2 (tons)#SO2/MMBtu 27,481 2.00 #NUMI #NUMI #NUMI #NUMI
,	
	Sulfur (tons) 13,745 #NUMI #NUMI
ituminous	MMBtu 27,489,039 #NUMI #NUMI #NUMI
Sub- Bitum	Tons Fired 1,617,002 #NUMI #NUMI #NUMI
	%S 0.85% 0.85% 0.85%
Calculated Information:	HHV 8,500 8,500 8,500
culated In	Unit 1 Unit 2 Unit 3
Cal	Project:

FIG. 45

†9/\$†

O & M Labor, Purchased Power And Fuel Calculations

GENERAL PROJECT INFORMATION:

File Name: CoalPerf031601

Project Name: Sample Project

Location: USA

Operator: To Be Determined

ANNUAL INFLATION RATE (to present day) 4.0%
BASE DATE 22-Aug-93
ESCALATION DATE 17-Mar-01

Part Year Esc. Factor 1.00

BASE INDEX	

	TOSI COO	ADJUSTMENT		
		PROJECT	147	154
×			99.7	7.00
BASE INDEX	location	MODEL		
	Zip Code to be used to identify location		COMPOST ADJUSTMENT	LABOR
	Being Updated			

Total Installed MW Average Unit Size **Number of Units**

1 373 373 1.00

Multiple Unit Labor Multiplier

LABOR SUMMARY (ADJUSTED FOR LOCATION)

SYSTEM: POWER BLOCK

CAPACITY (MW):

4 Operations and Maintenance NUMBER OF SHIFTS

Exchange Rate

1 Administration

141,321 122,478 113,057 103,638 64,669 120,715 94,847	150,743 379,389 1,420,192	455,997 414,542 373,088 829,085 224,185 224,185 413,879	310,409 482,859 482,756 827,756 413,879 413,879 827,758	7,039,261 0 87,890.76 62,850.54
			25 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	87,9 87,9 62,8
ANNUAL LABOR COST \$141,321 \$122,478 \$113,057 \$103,638 \$64,669 \$120,715 \$94,847	\$150,743 \$379,389 \$1,420,192	\$45,997 \$45,997 \$373,088 \$275,919 \$224,185 \$224,185 \$413,879	\$241,428 \$241,428 \$482,659 \$827,756 \$413,879 \$310,409 \$413,879	\$7,039,261 \$0 \$87,990.76 \$62,850.54 Corrected \$8,459,453 102 \$82,936
ANNUAL Wage with Fringes per Employee \$141,321 \$122,478 \$113,057 \$103,638 \$84,669 \$60,357 \$47,424 \$43,112	1 1 .	m)	\$103,470 \$103,470 \$103,470 \$77,602 \$103,470 \$103,470	T LABOR: Uncorrected \$8,459,453 102 \$82,936
FRINGES 40% 40% 40% 40% 40% 40%	40% 40% Total Adr	FRINGES 40% 40% 40% 40% 40% 40%	40% 40% 40% 40% 40% 40% 40%	O & W PLAN
ANNUAL Wage with O.T. per Employee \$100,944 \$174.025 \$46,192 \$43,112 \$33,874 \$50,795	\$53,837 \$33,874 ANNUAL Wage with O.T. per	\$81,428 \$74,025 \$66,623 \$74,025 \$49,271 \$40,033 \$40,033	\$25,430 \$73,907 \$73,907 \$73,907 \$73,907 \$73,907	SUB-TOTAL, O & M PLANT LABOR. s=1, no=0
ANNUAL WAGE WAGE \$100,944 \$87,485 \$80,755 \$41,993 \$39,193 \$30,795 \$27,985	\$53,837 \$30,785 ANNUAL	WAGE \$74,025 \$67,296 \$60,566 \$44,792 \$36,394 \$36,394 \$57,188	\$50,391 \$39,193 \$30,193 \$67,188 \$50,391 \$67,188	Adjusted for local labor requirements yes=1, no=0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
OVERTIME 10.0% 10.0% 10.0% 10.0% 10.0% 10.0%	10.0% 10.0%	OVERTIME 10% 10% 10% 10%	5000 0000 8888 8888	1 labor require 47 ,
OVERTIME (YES=1/NO=0) 0 1 1	0 1 OVERTIME	(YES=1/NO=0)		Adjusted for local labor re
HOURLY WAGE NA NA NA NA 820.19 \$18.34 \$13.46	N/A \$14.81 HOURLY	MAGE NA NA NA NA NA 17.50 \$17.50	\$24.23 \$18.84 \$18.84 \$32.30 \$24.23 \$32.30 \$32.20	
NUMBER OF EMPLOYEES HOURLY PER POSITION WAGE 1 NA 1 NA 1 NA 1 S20.19 2 \$18.34	2 NJA 22 \$14.81 22 NUMBER HOURLY	PER POSITION 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	4 4 00 00 00 4 4 4 00 15	
NUMBER OF SHIFT(S) 1 1 1 1 1	2 4 WUMBER	OSHITI(S)	1444 4444	
PERSHIPT REALITY RE	ER 1 2 NUMBER	R 		
ADMINISTRATIVE: PERTONS MANAGER OPERATIONS MANAGER MAINTENANCE MANAGER PLANT/RESULTS MANAGER OFFICE MANAGER ACCOUNTANT ACCOUNT CLERK SECRETARY	SULTS ENGINE	ቜ ~	MECTANICS RELFERS TRUCK DRIVER ASH/APC SLUDGE MOVER APC MECHANICS ELECTRICIANS ELECTRICIANS HELPERS INSTRUMENT TECH'S APC I & C	SUB-TOTAL 80
		<i>t9/Lt</i>		

III. REPLACEMENT RESERVE

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WATER & SEWER	Not Including Building Data Base	Č			
		5	3	200	
	WATER	#REF1	#REF1	#REF1	
	SEWER:	#REF1	#REF1	#REF1	
				#REF1	(1993\$)
	TOTA	TOTAL WATER & SEWER	WER	#REF1	(1996\$)
INSURANCE	POLICIES		APPRO	APPROXIMATION	
	1. ALL RISK POLICY (\$90 MILLION)			\$205,035	
	BUSINESS INTERRUPTION (\$15 MILLION)	ILLION)		\$80,406	
	3. THIRD PARTY LIABILITY	•		\$250,000	
	4. POLLUTION LIABILITY (\$1 MILLION)	Ê		\$50,000	
		TOTAL INSURANCE	ZANCE	\$	(1993\$)
				\$	

t9/8t

-								
PURCHASED POWER	UNIT 1	UNIT 2	UNIT 3	4 LINO	UNIT 5	UNIT 6	VIII 7	UNIT 8
HOUSE LOAD	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HOUSE LOAD-KW	20,489	0	0	0	0	0	0	0
HOURS PER YEAR OFF LINE	916.8	0	0	0	0	0	0	0
% OF HOUSE LOAD PURCHASED	10%	%0	%	%0	%0	%0	%	%0
POWER COST	90.0	0	0	0	0	0	0	•
ELECTRIC COST	\$112,706	\$	\$	\$	%	\$	\$	\$
DEMAND CHARGE	\$100,000	\$ 0	8	8	잃	8	%	잃
TOTAL ELECTRICITY COST	\$212,706	\$0	\$0	\$0	\$0	\$	\$0	\$

FIG. 48

Ø	TOTAL MILLION B.	NATURAL GAS REQUIRED @ OIL REQUIRED @
9 EAR (AVG. 3 DAY 1 T (MILLION BTU'S 5-15% of GHI (MILL RT-UP (HOURS)	TOTAL MILLION BTU'S REQUIRED FOR START.	
9.484614489 / Outage) S PER HOUR) .LION BTU'S PER HOUR)	-UP	\$0.20 per Therm \$0.80 per Gallon Gallons
21 21 7 3555 533.25 4 14,931	14,931	\$29,862 \$84,715 105,893
UNIT 2 0 0 0 0 #NUM! #NUM!	#NOM!	#NOM#
UNIT 3 0 0 0 0 #NUM! #NUM!	#NOM	#NOM
UNIT 4 0 0 0 0 0 0 0 0 0 0 4 4 4 0 4 0 4 0	#NCM	WNN#
UNIT 5 0 0 0 0 0 1 WUM! 4 A WUM!	#NOW#	#NOW!
UNIT 6 0 0 0 0 0 8 NUMI 4 4 *NUMI	#NOW#	#NOM!
UNIT 7 0 0 0 0 MNUMI 4 4 4 4 4 NUMI	#NOM#	#NOM!
#NUMI # 4	#NCM	#NOM!

REAL ESTATE TAXES
NOT INCLUDED IN ESTIMATE

WHEELING COST \$1,899,240 \$3,311,600

Calculated Value: 1.75198561 2.603019553

	Gen-KW	156,200											
	Reheater	000'006	emperature-r	water Heaters:									
Flow Rates	Superheater	1,025,000	boller reedwater lemperature-r	Number of Feedwater Heaters									
Φ			72%	2906	9414	9715	9866	10194	10395	10575			
iations in heat rate at partial loads in the			20%	8227	8395	8584	8757	8917	9062	9202	9334	9460	
irtial loa			75%	8016	8073	8177	8302	8427	8543	8653	8757	8857	
te at pa			100%	8000	8009	8059	8136	8230	8330				
heat ra			OM/	8003	8017	8061	8132	8225	8328	8433	8532	8629	
tions in		78	VWO.OP	7993	7995	8032	8092	8181	8275	8376	8472	8566	
t varia	del	ı. €	8	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
o adjus	the mo	TC2F Length	EX		7993	7995	8032	8092	8181	8272	8376	8472	8566
used to	ction of			7746	7897	7995	8069	8129	8181	8226	8264	8299	8331
This tab is being used to adjust var	performance section of the model	%	Change	-3.12%	-1.22%	0.00%	0.93%	1.68%	2.33%	2.89%	3.36%	3.80%	4.20%
This tab	pertorn		Pressure	0.5				2.5		3.5	4	4.5	9

460 6

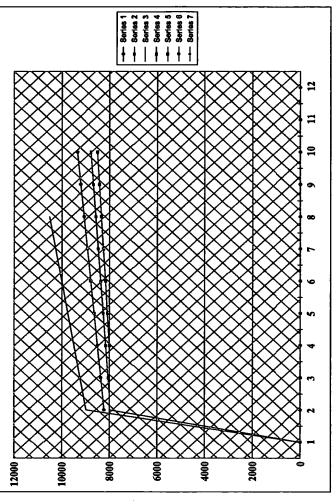


FIG. 50

†9/0\$

					Series 2	Series 5	Series 7				9 10
					× ×		$\stackrel{\times}{\times}$			$\overset{\times}{\times}$	6 7 8
				$\overset{\wedge}{\otimes}\overset{\wedge}{\otimes}$	$\stackrel{\times}{\sim}$		$\stackrel{\times}{\times}$. 4 . v
							$\stackrel{\times}{\times}$				1 2 3
		\simeq	<u> </u>		\bigotimes_{ξ}		X			₩Į	•
	<u>_</u>	83	9790	10558							
30	75% 50% 25%	8225	8531	9045			9112 9844	925 4 10005	Gen-KW	156,200 F: 460	•
TC2F Last Stage Bucket Length 30	100% 75% 50%	7853 7844 7907 8225	7915 7918 8068 8531	3208 8212 8464 9045	3376 8636 5536	8962 8962	3841 9112	4076 L669		900,000 156,200	•

near Nates	0.22%	0.28%	0.33%	0.39%	0.44%	0.50%	0.56%	0.61%
Load	20%	25%	30%	% 58	40%	45%	20%	25%
Test Heat Rates	13,463	12,476	11,827	11,371	11,036	10,782	10,584	10,427
calc. uncorrected	9,742	9,773	9,805	9886	9,868	9,900	9,932	9,964
Steam correction factor	1.382	1.277	1.206	1.158	1.118	1.089	1.066	1.046
	1.1291239	1.11890487	1.11890487 1.10868585 1.09846682	1.09846682	1.0882478	1.07802877	1.07802877 1.06780975	1.05759072
			-8.80%	-5.24%	-2.77%	-1.03%	0.20%	1.05%

70040	/000	950/	/000	950	1007	450/	200	/044
CUBCK	6 0.70	%C7	20%	%C?	\$2\$	%C 4	%00	% CC
200MW Tandem Compound		9,650					8,523	
350MW Tandem Compound		10,143					8,712	
400MW Tandem Compound		10,225					8,767	
600MW Tandem Compound		9,994					8,500	

1.17%	105%	9,823	10,300	0.954	0.95540047	0.18%	105%	8,010	906'2	7,911	7,848
1.11%	100%	9,844	10,266	0.959	0.9656195	0.70%	100%	8,036	7,955	7,964	7,872
1.06%	% 26	9,870	10,231	0.965	0.97583852	1.14%	95%				
1.00%	%06	9,902	10,197	0.971	1671462 1.0064956 0.99627657 0.98605755 0.97583852 0.9656195	1.52%	%06				
0.94%	85%	9,941	10,163	0.978	0.99627657	1.82%	85%				
0.89%	%08	9,988	10,130	0.986	1.0064956	2.04%	80%				
0.83%	75%	10,045	10,096	0.995		2.14%	75%	8,133	8,189	8,210	8,009
0.78%	%02	10,114	10,063	1.005	1.0473717 1.03715267 1.02693365 1.0	2.13%	%02				
0.72%	65 %	10,198	10,030	1.017	1.03715267	1.97%	% 59	=			
0.67%	%09	10,301	766,6	1.030	1.0473717	1.62%	%09				
		 	i	1	† †	9/	79	5	1	1	1

FIG. 52

FIG. 53

†9/ES

0.800

Correction Factor

0.700

1.200

1.000

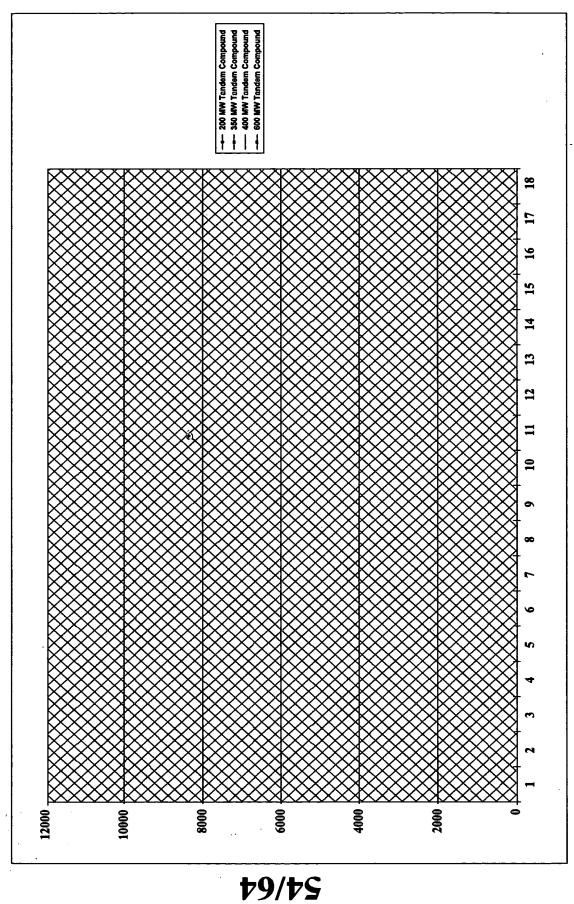


FIG. 54

CoalPerf031601	Sample Project
File Name:	Project Name:
	Δ.

Calculated Cana

	IE Dispatch Information:	For Reference Only	nce Only							
	Average Capacity:	2001	2002	2003	2004	2005	2008	2007	2008	2009
	Capacity Factor	83.70%	85.00%	71.30%	69.60%	67.50%	68.10%	67.10%	68.00%	67.90%
	Calculated Capacity Factor	89.53%	77.10%	87.78%	88.03%	87.78%	87.78%	87.78%	77.34%	87.78%
7	Availability	%00.06	%00.06	%00 .06	%00.06	%00.06	%00.06	%00'06	%00.06	%00.06
3	Average Load	93.00%	94.44%	979.22%	77.33%	75.00%	75.67%	74.56%	75.56%	75.44%
	Hours in Years	8,760	8,760	8,784	8,760	8,760	8,760	8,760	8,760	8,760
	Hours Dispatched	7,884	7,884	7,906	7,884	7,884	7,884	7,884	7,884	7,884
	Annual Output	2,731,405	2,773,829	2,33,127	2,721,276	2,202,746	2,222,326	2,195,692	2,219,063	2,215,800
_	Calculated Annual Output	2,921,796	2,515,870	2,864,503	2,872,651	2,864,503	2,864,503	2,864,503	2,524,019	2,864,503
	Major Outages		-						-	
	Hours Available for Dispatched	2001	2002	2003	2004	2005	2008	2007	2008	2009
	January	1	≱	1	4	1	¥	4	¥	₹
	February	672	672	672	672	672	672	672	672	672
	March	240	240	240	240	240	240	240	240	240
	April	720	720	720	720	720	720	720	720	720
	May	¥	74	¥	\$	4	4	4	74	4
	June	720	720	720	720	720	720	720	720	720
	July	¥	744	4	¥	744	44	4	744	74
	August	4	744	¥	\$	744	44	44	744	744
	September	720	720	720	720	720	720	720	720	720
	October	₹	0	4	¥	744	5	4	0	744
	November	720	456	720	720	720	720	720	456	720
	December	₹	4	≱	≨∣	<u>¥</u>	4	4	744	4
	Total	8228	7248	8228	8280	8256	8256	8256	8258	8256
	Hours Dispatched	2001	2002	2003	2004	2005	2006	2007	2008	2009
	January	4	692	692	692	692	692	692	692	692
	February	672	625	625	64	625	625	625	3	625
	March	경 :	55 <u>6</u>	52 1	8 7 8	82 E	8 I	82 I	578 1	8 8
	Apri	97.5	2 6	2 5	2 6	2 5	/ P	7.5	//9	101
	enil.	5 5	584	§ §	§ §	5 2	§ §	58	684) 8g
	À⊒F	4	714	714	714	714	714	714	714	714
	August	¥	714	714	714	714	714	714	714	714
	September	720	684	5 8	68	684	684	684	684	684
	October	4	0	707	707	707	707	707	0	707
	November	120	429	677	677	428	22	677	429	677
	December	¥	669	8	66 66	669 	669 	689	669	669
	Total Hours Dispatched	8258	6851	6851	7828	7806	7806	7806	6873	7806
	Percentage of Available Hours	100.00%	94.52%	94.54%	94.54%	94.54%	94.54%	94.54%	94.51%	24.54 %
	Percentage of Annual Hours	94.25%	78.20%	89.10%	89.1%	89.10%	89.10%	89.10%	78.24%	89.10%
	Average Annual Load	95.00%	98.58%	98.51%	98.51%	98.51%	98.51%	98.51%	98.58%	98.51%
		I,								
		1))						

†9/SS

1,000 1,00	90.00% 75.33% 8.780		\ce	/07 E0	1007	00.00	22.12	2 20 20	07.42.70	D/ 100 /D	67.40%	
1,2,231,687 2,544% 7,444% 75,111% 74,00% 74,56% 74,00% 74,67% 74,77% 74,79% 74,79% 74,79% 74,79% 74,79% 74,79% 74,79% 74,79% 74,79% 74,79% 74,79% 74,89% 75,700 7,790	75.33%	90.00%	88.03% 90.00%	%87.78 90.00%	%0L'//	%87.78 80.00%	88.03%	%87.78 80.00	87.78 90.00%	%97.78 90.00%	77.34%	
1,000, 1,000,	2 7 R.D	75.78%	75.44%	74.44%	75.11%	74.00%	74.56%	74.00%	74.67%	74.78%	74.89%	
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,		8,78 4,78 4,00 4,00 4,00 4,00 4,00 4,00 4,00 4,0	8,760	8,760	8,760	8,78 2,00 2,00 2,00 2,00 2,00 2,00 2,00 2,0	8,760	8,760	8,760	8,78	8,760	.,
2,004,003 2,072,651 2,084,003 2,515,070 2,084,003 2,08	7,564 212 836	7 221 AR7	7,884 2,245,800	7,884 2 188 430	7,884 2,208,040	7,906	7,884	7,884	7,884	7,906	7,884	
The color of the	864,503	2,864,503	2,872,651	2,864,503	2,515,870	2,864,503	2,872,651	2,864,503	2,864,503	2,864,503	2,524,019	·
Table Tabl					-						-	
144 744	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
672 720 720 <td>4</td> <td>\$</td> <td>44</td> <td>¥</td> <td>¥</td> <td>¥</td> <td>4</td> <td>\$</td> <td>4</td> <td>¥</td> <td>4</td> <td>¥</td>	4	\$	44	¥	¥	¥	4	\$	4	¥	4	¥
240 120 120 <td>672</td> <td>672</td> <td>672</td> <td>672</td> <td>672</td> <td>672</td> <td>969</td> <td>672</td> <td>672</td> <td>672</td> <td>672</td> <td>672</td>	672	672	672	672	672	672	969	672	672	672	672	672
720 720 <td>240</td>	240	240	240	240	240	240	240	240	240	240	240	240
144 144	720	720	720	720	720	720	720	720	720	720	720	720
720 720 <td>¥</td> <td>\$</td> <td>44</td> <td>4</td> <td>74</td> <td>44</td> <td>4</td> <td>4</td> <td>744</td> <td>\$</td> <td>4</td> <td>¥</td>	¥	\$	44	4	74	44	4	4	744	\$	4	¥
744 744 <td>720</td>	720	720	720	720	720	720	720	720	720	720	720	720
744 744 <td>4</td> <td>44</td> <td>744</td> <td>4</td> <td>744</td> <td>744</td> <td>4</td> <td>44</td> <td>44</td> <td>44</td> <td>74</td> <td>4</td>	4	44	744	4	744	744	4	44	44	44	74	4
720 720 <td>4</td> <td>4</td> <td>744</td> <td>4</td> <td>4</td> <td>4</td> <td>44</td> <td>44</td> <td>744</td> <td>4</td> <td>447</td> <td>4</td>	4	4	744	4	4	4	44	44	744	4	447	4
144 144 144 0 144	720	720	720	720	720	720	720	720	720	120	720	720
720 720 720 456 720 720 720 720 456 144	1	¥	744	4	0	4	4	4	747	¥	0	\$
2011 2012 2013 2014 744	720	720	720	720	456	720	720	720	720	720	456	720
2011 2012 2013 2014 2002 2016 2017 2018 2019 2020 2016 2017 61	<u>¥</u>	<u>¥</u>	4	<u>¥</u>	<u>¥</u>	\$	<u>¥</u>	<u>\$</u>	¥	4	744	4
2011 2012 2013 2014 2002 2016 2017 2018 2019 2020 692 693 <td< td=""><td>8256</td><td>8256</td><td>8280</td><td>82586</td><td>7248</td><td>8256</td><td>8280</td><td>8256</td><td>8256</td><td>8256</td><td>7272</td><td>8256</td></td<>	8256	8256	8280	82586	7248	8256	8280	8256	8256	8256	7272	8256
692 692 692 692 692 692 692 692 692 693 <td>2010</td> <td>2011</td> <td>2012</td> <td>2013</td> <td>2014</td> <td>2002</td> <td>2016</td> <td>2017</td> <td>2018</td> <td>2019</td> <td>2020</td> <td>2021</td>	2010	2011	2012	2013	2014	2002	2016	2017	2018	2019	2020	2021
625 647 625 647 625 647 625 625 647 625 625 647 626 226 <td>692</td> <td>692</td> <td>692</td> <td>692</td> <td>692</td> <td>692</td> <td>692</td> <td>692</td> <td>692</td> <td>695</td> <td>692</td> <td>695</td>	692	692	692	692	692	692	692	692	692	695	692	695
226 226 <td>625</td> <td>625</td> <td>647</td> <td>625</td> <td>625</td> <td>625</td> <td>\$</td> <td>625</td> <td>625</td> <td>625</td> <td>647</td> <td>625</td>	625	625	647	625	625	625	\$	625	625	625	647	625
677 677 677 677 677 677 677 677 677 677 677 677 677 677 707 <td>526</td> <td>526</td> <td>226</td> <td>226</td> <td>226</td> <td>226</td> <td>226</td> <td>226</td> <td>226</td> <td>226</td> <td>226</td> <td>526</td>	526	526	226	226	226	226	226	226	226	226	226	526
707 704 714 <td>222</td> <td>229</td> <td>677</td> <td>677</td> <td>677</td> <td>677</td> <td>677</td> <td>22.5</td> <td><i>677</i></td> <td><i>ETT</i></td> <td>677</td> <td>677</td>	222	229	677	677	677	677	677	22.5	<i>677</i>	<i>ETT</i>	677	677
684 684 <td>707</td>	707	707	707	707	707	707	707	707	707	707	707	707
714 717 707 707 707 707 <td>8</td> <td>68</td> <td>684</td> <td>684</td> <td>684</td> <td>684</td> <td>684</td> <td>88</td> <td>684</td> <td>684</td> <td>68</td> <td>8</td>	8	68	684	684	684	684	684	88	684	684	68	8
714 714 <td>714</td>	714	714	714	714	714	714	714	714	714	714	714	714
684 689 699 699 699 699 699 699 699 699 699 699 699 699 699 <td>714</td>	714	714	714	714	714	714	714	714	714	714	714	714
707 707 707 707 707 707 707 707 0 677 677 677 677 677 677 677 677 677 677 677 677 677 677 429 699	68	684	684	684	8 8	684	68 4	684	684	684	684	8 8
677 677 677 677 677 679 679 677 677 679 679 679 679 689 <td>707</td> <td>707</td> <td>707</td> <td>707</td> <td>0</td> <td>707</td> <td>707</td> <td>707</td> <td>707</td> <td>707</td> <td>0</td> <td>707</td>	707	707	707	707	0	707	707	707	707	707	0	707
689 6873 6873 6873 6873 6873 6873 6873 6875	<i>6</i> 77	677	677	677	429	677	222	677	677	<i>671</i>	429	677
7806 7828 7806 6851 7806 7828 7806 7806 7805 6873 5 94.54% 94.54% 94.52% 94.54% 94.54% 94.54% 94.54% 94.51% 5 89.10% 89.11% 89.10% 78.20% 89.10% 89.11% 89.10% 89.10% 78.24% 5 98.51% 98.51% 98.51% 98.58% 98.51% 98.51% 98.51% 98.51% 98.58%	669	669	669	669	689	669	669	669	669 9	669	669	669
89.10% 89.11% 89.54% 94.52% 94.54% 94.54% 94.54% 94.54% 94.51% 89.10% 89.11% 89.10% 78.20% 89.10% 89.11% 89.10% 89.10% 78.24% 98.51% 98.51% 98.51% 98.58% 98.51% 98.51% 98.51% 98.51% 98.58%	7806	7806	7828	7806	6851	7806	7828	7806	7806	7806	6873	7806
5 89.10% 89.11% 89.10% 78.20% 89.10% 89.11% 89.10% 89.10% 78.24% 5 98.51% 98.51% 98.58% 98.51% 98.51% 98.51% 98.51% 98.55% FIG. 56	94.54%	94.54%	94.54%	94.54%	94.52%	94.54%	94.54%	94.54%	94.54%	94.54%	94.51%	94.54%
98.51% 98.51% 98.51% 98.58% 98.51% 98.51% 98.51% 98.51% 98.58% PK	9.10%	89.10%	89.11%	89.10%	78.20%	89.10%	89.11%	89.10%	89.10%	89.10%	78.24%	89.10%
FIG. 56	8.51%	98.51%	98.51%	98.51%	98.58%	98.51%	98.51%	98.51%	98.51%	98.51%	98.58%	98.51%
							74					
							1					

†9/9\$

Houre Available for Dispatch	744	679	240	720	May-01	720 720	244 744
Tours Available for Dispatch	**************************************	400 00%	240 200 004	700 000	44	, 700 004 100 004	45,00
refermage of mouts Disparched	%00.001 %00.001	%.00.001 %.00.001	%.00.001	100.00%	00.001 0.007	100.00%	100.00%
200	95.00%	95.00%	95.00%	95.00%	95.00%	95.00%	92.00%
Fuel Fired tons/hr	195.86	195.86	195.86	195.86	195.86	195.86	195.86
tons	145,718	131,616	47,006	141,018	145,718	141,018	145,718
Total Ash (100% up)- tons	8,015	7,239	2,585	7,756	8,015	7,756	8,015
Total Limestone (100% up)- tons	2,160	1,951	269	2,090	2,160	2,090	2,160
Total Flyash/Limestone Load- tons	10,174	9,189	3,282	9,864	10,174	9,846	10,174
Heat Rate Information:							
Gross Generation	263,301,377	237,820,598	84,935,928	254,807,784	263,301,377	254,807,784	263,301,377
Unit 1 Gross Heat Rate-BTU/kWh:	9,408	9,408	9,408	9,408	9,408	9,408	9,408
Net Generation	248,819,801	224.740.465	80,264,452	240.793.356	248.819.801	240.793,356	248.819.801
Plant Net Heat Rate- BTU/kWh:	9,956	9,956	9,956	9,956	9,956	9,956	9,956
Unit 1 Dispatch Information:	January-02	February-02	March-02	April-02	May-02	June-02	July-02
Hours Available for Dispatch	747	672	240	720	447	720	4
Percentage of Hours Dispatched	93.00%	93.00%	94.00%	94.00%	92.00%	95.00%	%00 .96
Average Dispatched Load	98.00%	%00.86	92.00%	38.00%	98.00%	%00.66	100.00%
Fuel Fired tons/hr	202.48	202.48	200.27	202.48	202.48	204.89	206.90
tons	140,097	126,539	45,180	137,035	143,110	140,006	147,777
Total Ash (100% up)- tons	7,705	6,960	2,485	7,537	7,871	7,700	8,128
Total Limestone (100% up)- tons	2,232	2,016	712	2,160	2,232	2,184	2,281
Total Flyash/Limestone Load- tons	9,938	8,976	3,197	6,697	10,104	9,884	10,409
Heat Rate Information:							
Gross Generation	252,603,026	228,157,572	81,520,610	247,083,085	258,035,349	252,259,706	266,072,970
Unit 1 Gross Heat Rate- BTU/kWh:	9,428	9,428	9,422	9,428	9,428	9,435	9,442
Net Generation	238,709,860	215,608,906	77,036,976	233,493,515	243,843,405	238,385,422	251,438,957
Plant Net Heat Rate- BTU/kWh:	9.977	9.977	9.970	9.977	9.977	9.984	9,991

Unit 1 Gross Capacity:

373

2001	89.53%			2,350.29	1,617,002	88,935	23,964	112,899	2,921,795,923	9,408	2,761,097,147	9,956	2002	77.10%			2,440.77	1,395,919	76,776	21,885	98,661	2,515,870,136	9,432	2,377,497,279	9,981
	Gross Capacity Factor:			Fuel Fired tons/hr	tons	Total Ash (100% up)- tons	Total Limestone- tons	Total Flyash/Limestone Load- tons	Gross Generation	Unit 1 Gross Heat Rate- BTU/kWh:	Net Generation	Plant Net Heat Rate- BTU/kWh:		Gross Capacity Factor:			Fuel Fired tons/hr	tons	Total Ash (100% up)- tons	Total Limestone- tons	Total Flyash/Limestone Load- tons	Gross Generation	Unit 1 Gross Heat Rate- BTU/kWh:	Net Generation	Plant Net Heat Rate- BTU/kWh:
December-01	¥	100.00%	92.00%	195.86 Fuc	145,718	8,015	2,160	10,174 Total	263,301,377	9,408 Unit 1	248,819,801		December-02	744	94.00%	%00.86	202.48 Fu	141,603	7,788	2,232	10,021 Total	255,319,188	9,428 Unit '	241,276,632	
November-01	720	100.00%	95.00%	195.86	141,018	7,756	2,090	9,846	254,807,784	9,408	240,793,356	9,956	November-02	456	94.00%	38.00%	202.48	86,789	4,773	1,368	6,142	156,485,954	9,428	147,879,226	9,977
October-01	44	100.00%	95.00%	195.86	145,718	8,015	2,160	10,174	263,301,377	9,408	248,819,801	9,956	October-02	0	95.00%	98.00%	202.48	0	0	0	0	0	#DIV/0i	0	#DIV/0}
September-01	720	100.00%	95.00%	195.86	141,018	7,756	2,090	9,846	254,807,784	9,408	240,793,356	9,956	September-02	720	95.00%	%00 '66	204,89	140,006	7,700	2,184	9,884	252,259,706	9,435	238,385,422	9,934
August-01	4	100.00%	95.00%	195.86	141,018	7,756	2,090	9,846	254,807,784	9,408	240,793,356	9,956	August-02	744	%00 .96	100.00%	206.90	147,777	8,128	2,281	10,409	266,072,970	9,442	251,438,957	9,991

Unit 1 Dispatch information:	January-03	February-03	March-03	April-03	May-03	June-03	July-03
Hours Available for Dispatch	744	672	240	720	744	720	747
Percentage of Hours Dispatched	93.00%	93.00%	94.00%	94.00%	95.00%	95.00%	%00 .96
Average Dispatched Load	38.00 %	%00'86	%00'. 6	88.00%	%00 ′86	%00.66	100.00%
Fuel Fired tons/hr	202.48	202.48	200.27	202.48	202.48	204.89	206.90
tons	140,097	126,539	45,180	137,035	143,110	140,006	147,777
Total Ash (100% up)- tons	7,705	096'9	2,485	7,537	7,871	7,700	8,128
Total Limestone (100% up)- tons	2,232	2,016	712	2,160	2,232	2,184	2,281
Total Flyash/Limestone Load- tons	9,938	8,976	3,197	6,697	10,104	9,884	10,409
Heat Rate Information:						•	
Gross Generation	252,603,026	228,157,572	81,520,610	247,083,085	258,035,349	252,259,706	266,072,970
Unit 1 Gross Heat Rate- BTU/kWh:	9,428	9,428	9,422	9,428	9,428	9,435	9,442
	238,709,860	215,608,906	77,036,976	233,493,515	243,843,405	238,385,422	251,438,957
	726'6	9,977	9,970	9,977	9,977	9,984	9,991
Unit 1 Dispatch Information:	January-04	February-04	March-04	April-04	May-04	June-04	July-04
Hours Available for Dispatch	74	969	240	720	744	720	744
Percentage of Hours Dispatched	93.00%	93.00%	94.00%	94.00%	95.00%	92.00%	%00 .96
Average Dispatched Load	98.00%	%00.86	94.00%	%00.86	%00'86	800.66	100.00%
Fuel Fired tons/hr	202.48	202.48	200.27	202.48	202.48	204.89	206.90
tons	140,097	131,058	45,180	137,035	143,110	140,006	147,777
Total Ash (100% up)- tons	7,705	7,208	2,485	7,537	7,871	7,700	8,128
Total Limestone (100% up)- tons	2,232	2,088	712	2,160	2,232	2,184	2,281
Total Flyash/Limestone Load- tons	9,938	9,297	3,197	6,697	10,104	9,884	10,409
Heat Rate Information:							
Gross Generation	252,603,026	236,306,057	81,520,610	247,083,085	258,035,349	252,259,706	266,072,970
Unit 1 Gross Heat Rate- BTU/kWh:	9,428	9,428	9,422	9,428	9,428	9,435	9,442
	238,709,860	223,309,224	77,036,976	233,493,515	243,843,405	238,385,422	251,438,957
Plant Net Heat Rate- BTU/kWh:	226	426	0 0 0	225	440	0 984	9 9 9

FIG. 59

2003	~			2,440.77	1,589,275	87,410			2,864,502,616	9,432	2,7(2004	88.03%			2,440.77	1,589,275	87,410	, 24,910	112,321	2,864,502,616	9,432	2,706,954,973	
	Gross Capacity Factor:	•		ed tons/hr	tons	Total Ash (100% up)- tons	Total Limestone- tons	Total Flyash/Limestone Load- tons	Gross Generation	Unit 1 Gross Heat Rate- BTU/kWh:	Net Generation	Plant Net Heat Rate- BTU/kWh:		Gross Capacity Factor:			ed tons/hr	tons	Total Ash (100% up)- tons	Total Limestone- tons	Total Flyash/Limestone Load- tons	Gross Generation	Unit 1 Gross Heat Rate- BTU/kWh:	Net Generation	Plant Net Heat Rate- BTU/kWh:
				Fuel Fired	• ;			Total Flya		Unit 1 Gro		Plant I					Fuel Fired		_		Total Flya		Unit 1 Gro		Plant I
December-03	744	94.00%	98.00%	202.48	141,603	7,788	2,232	10,021	255,319,188	9,428	241,276,632	6,977	December-04	744	94.00%	%00.86	202.48	141,603	7,788	2,232	10,021	255,319,188	9,428	241,276,632	726'6
November-03	720	94.00%	%00 .86	202.48	137,035	7,537	2,160	6,697	247,083,085	9,428	233,493,515	9,977	November-04	720	94.00%	38.00%	202.48	137,035	7,537	2,160	6,697	247,083,085	9,428	233,493,515	9,977
October-03	744	95.00%	98.00%	202.48	143,110	7,871	2,232	10,104	258,035,349	9,428	243,843,405	9,977	October-04	744	95.00%	38.00%	202.48	143,110	7,871	2,232	10,104	258,035,349	9,428	243,843,405	6,977
September-03	720	95.00%	%00 .66	204,89	140,006	7,700	2,184	9,884	252,259,706	9,435	238,385,422	9,934	September-04	720	95.00%	%00 [°] 66	204,89	140,006	7,700	2,184	9,884	252,259,706	9,435	238,385,422	9,934
August-03	4	%00 .96	100.00%	206.90	147,777	8,128	2,281	10,409	266,072,970	9,442	251,438,957	9,991	August-04	4	%00 .96	100.00%	206.90	147,777	8,128	2,281	10,409	266,072,970	9,442	251,438,957	9,991

2005	87.78%			2,440.77	1,589,275	87,410	24,910	112,321	2,864,502,616 9,432 2,706,954,973 9,981
	Gross Capacity Factor:	•		tons/hr	tons	Total Ash (100% up)- tons	Total Limestone- tons	Total Flyash/Limestone Load- tons	Gross Generation Unit 1 Gross Heat Rate- BTU/kWh: Net Generation Plant Net Heat Rate- BTU/kWh:
	Gross			Fuel Fired		Total As	Tota	Total Flyash/Lim	Unit 1 Gross Hea
December-05	744	94.00%	800.86	202.48	141,603	7,788	2,232	10,021	255,319,188 9,428 241,276,632 9,977
November-05	720	94.00%	38.00%	202.48	137,035	7,537	2,160	69,697	247,083,085 9,428 233,493,515 9,977
October-05	744	92.00%	98.00%	202.48	143,110	7,871	2,232	10,104	258,035,349 9,428 243,843,405 9,977
September-05	720	95.00%	%00 [.] 66	204,89	140,006	7,700	2,184	9,884	252,259,706 9,435 238,385,422 9,934
August-05	4	%00'96	100.00%	206.90	147,777	8,128	2,281	10,409	266,072,970 9,442 251,438,957 9,991
					_	_	_		

FIG. 62

†9/79

Assumed Tax (per ton of Carbon): \$40

Sub-Bituminous

Facility Net Heat Rate (HHV):	BTU/KWH	9,956
HHV of Coal:	BTU/#	8,500
Percent Carbon in Coal (WT)		48.30%
Unit Capacity:	MW	373
Carbon Loss:		0.25%
Molecular Weight of Carbon		12.01
Molecular Weight of O2		32.00
Price per MMBtu from Coal	,	1.11
Price per Ton of Coal (delivered)	per Ton	\$30.00
Net KWH Produced:		2,761,097,147
Coal Fired	Tons	1,617,002
		
Carbon in Flue Gas	Tons	781,012
CO2	Tons	2,861,804
Fuel Cost:	Total	\$48,631,344
	\$/kwh	\$0.0176
	Carbon Tax:	\$31,240,484
	per KWH	\$0.0113
	per MMBtu	\$1.14

Tons CO2/kWh

0.001036473

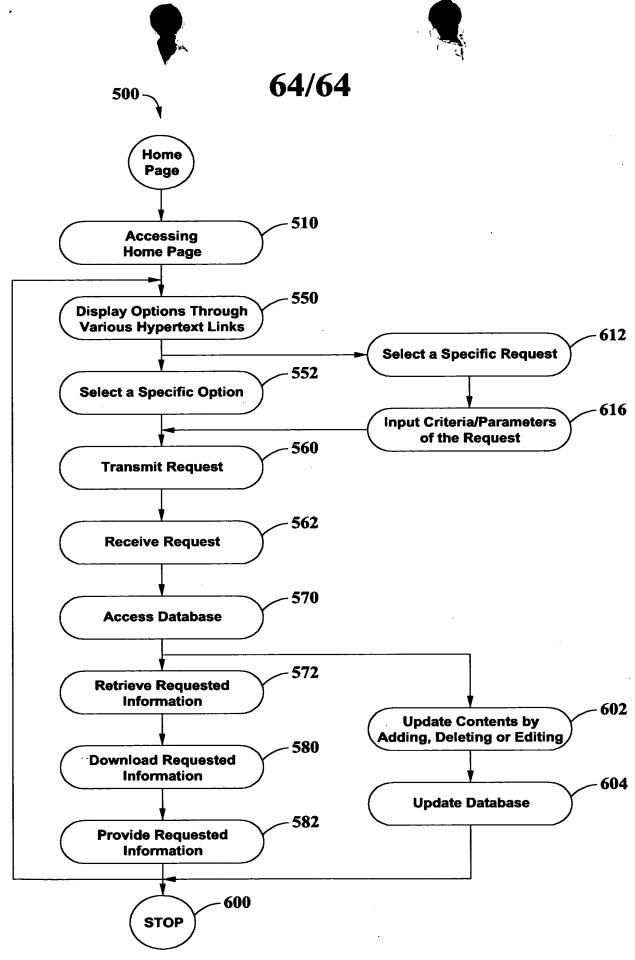


FIG. 64